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EXAMINER

PATEL, KAUSHIKKUMAR M

ART UNIT	PAPER NUMBER
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2188

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ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

mailroom@bskb.com

Office Action Summary	Application No. 10/829,168	Applicant(s) UENO, TOSHIHARU	
	Examiner Kaushikkumar Patel	Art Unit 2188	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 November 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1,3,6,9 and 11-18 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,3,6,9 and 11-18 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>9/25/2008</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Response to Amendment

1. This Office Action is in response to applicant's communication filed November 24, 2008 in response to PTO Office Action mailed August 22, 2008. The applicant's remarks and amendments to the claims and/or specification were considered with the results that follow.
2. In response to last Office Action, claim 1 has been amended. Claims 2, 4, 5, 7, 8 and 10 have been previously canceled. Claims 14-18 have been added. As a result, claims 1, 3, 6, 9, and 11-18 remain pending in this application.
3. The rejections and/or objections not mentioned here are withdrawn due to the amendments filed on November 24, 2008.

Response to Arguments

4. Applicant's arguments filed November 24, 2008 have been fully considered, but they are not fully persuasive.

Applicant argues that Chiba fails to teach or suggest allocating a specific area having frequently changing information to at least one page in one block of the plurality of blocks, wherein pages in said one block each contain an area for recording area management information (remarks, page 7, paragraph 2). The Examiner respectfully disagrees with the fact. Chiba teaches allocating FAT and directory area to the cluster 1 or block 2 of the memory device (Chiba, fig. 4, col. 8, lines 53-62), where the cluster is same size as the block and the block includes 16 pages (Chiba, col. 5, lines 53-57). The

FAT is stored in the first three pages of the 16 pages in the block and directory is stored in the remaining 13 pages (col. 8, lines 53-62; col. 9, lines 9-20). Chiba also teaches that the FAT and the directory can be stored together in one block or they can be allocated separately (col. 16, lines 37-54). The FAT and directory are considered as frequently changing information and as explained above, Chiba teaches allocating FAT in the first three pages of the sector/block, therefore the Applicant's argument is not persuasive.

The Applicant further argues that Chiba does not illustrate the pages in a block each contain an area for recording area management information (remarks, page 7). The Examiner respectfully disagrees with the fact. It is noted here that Chiba expressly fails to teach such area, however as taught in fig. 2, the memory is divided into the pages and blocks (e.g. 16384 pages and 1024 blocks), where the page is 528 bytes in length, which is divided into the 512 bytes and 16 bytes, where it is well known in the art the 16 bytes are used for storing various management information. Estakhri (US 7,155,559) and Yamazaki (US 7,050,190) are included as reference for such teaching in the rejections of the claims below.

Applicant further argues that “cluster group 1 in fig. 17 represents 2 blocks (as illustrated in fig. 16), and it is not clear from Chiba that the crossed-out section located below directory in fig. 17 is present in the same block as FAT and directory portions. It is entirely possible that the crossed-out section located below directory in fig. 17 belongs to a block different from the block including some of FAT and Directory portions. Hence fig. 17 of Chiba does not teach “allocating a specific area having frequently changing

information to at least one page in one block of the plurality of blocks, wherein multiple pages in said one block each contain an area for recording area management information” (remarks, page 8). The Examiner agrees with the applicant's interpretation of the figs. 16 and 17, where it is possible that the crossed-out section below the FAT and directory region in cluster 1 (fig. 17) can be a part of the another block, however it is understood here that Chiba teaches allocating total of four blocks (e.g. two cluster groups) for the FAT and directory region (see fig. 16), where it is possible that when the size of the memory is much larger than more user data can be stored in the memory and therefore more space is required to save the FAT and directory (see col. 16, line 55 - col. 17, line 12; when the memory is size is about 1MB, two pages are allocated for FAT1 and FAT2 and if the memory size is 8 or 16 MB, about 11 pages (e.g. pages 5-16) are allocated for the FAT1 and FAT2) and it is possible that the size of the FAT and directory can grow beyond the one block and therefore the FAT and directory can be part of the another block, however as shown in fig. 17, the space below the FAT and directory region remains unused (e.g. not allocated to the user data), which can be part of one block and remaining unused other block or just part of second block. Chiba further teaches that the flag is used for the indication in which cluster/block the FAT and directory is stored, while the other cluster group is not marked with the flag. Chiba teaches (col. 19, lines 32-61):

“According to this embodiment, the structure of the memory control system and the format structure of the flash memory 1 are the same as the first embodiment. However, the number of a cluster in which the FAT and directory data are to be written is not specified and instead, a particular number is allocated to a cluster belonging to a particular cluster group which will be described later. **The CPU 31 determines a**

cluster in which the FAT and directory data are written according to an identification flag which will be described later.

FIG. 16 is a diagram showing particular cluster groups for storing data of the FAT and directory according to this embodiment. As shown here, the particular cluster group includes two groups, cluster group 1 and cluster group 2, **in any one of which the FAT and directory are to be written.**

The structures of the directory and FAT are substantially the same as the first and second embodiments. As shown in FIG. 17, **an identification flag employing the value "FFh" which cannot be used by ordinary data is written at a head of a cluster group in which the FAT and directory are written.** On the other hand, **the cluster group in which the FAT and directory are not written is an empty block.** Further, each identification code (not shown) is attached to the head of the FAT region and directory region.'

As it can be seen from above paragraphs, the cluster group with the FAT and directory is marked with the flag so CPU can determine where the FAT and directory are stored and the ordinary data is not stored in the remaining portion, which stays empty. Now, claim recites "at least one page" and the broadest reasonable interpretation allows that there can be more than one page containing the frequently changing information, similarly if the size of the FAT and directory grows, it is necessary to use/allocate more than one block, otherwise proper information retrieval is not possible.

Applicant's remaining arguments are moot in view of new grounds of the rejection.

Information Disclosure Statement

5. The information disclosure statement (IDS) submitted on September 25, 2008 was filed after the mailing date of the Non-Final Office Action on August 22, 2008. The

submission is in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statement is being considered by the examiner to the extent understood by the translated abstract of the foreign patent documents.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

7. Claims 1, 3, 6, 9, and 11-18 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chiba (US 6,411,552) and further in view of Estakhri et al. (US 7,155,559) and Yamazaki et al. (US 7,050,190).

As per claim 1, Chiba teaches a method of recording and reproducing information in which a recording area of a recording medium is physically divided into plurality of blocks and each block is partitioned into plurality of pages (fig. 1, item 1, fig. 2 shows recording medium is divided into blocks and blocks are further divided into pages, also col. 5, lines 50-60, col. 2, lines 27-30, data erasing is carried out in units of one block, col. 6, lines 22-24; col. 17, line 65 – col. 18, line 5), the method comprising step of:

recording and erasing information in one or more the pages in blocks of the plurality of blocks (Chiba, col. 2, lines 27-29; col. 6, lines 22-24);

allocating a specific area having a frequently changing information to at least one page in one block of the plurality of blocks (Chiba, fig. 4, col. 16, lines 37-42, "FAT and directory are allocated in the same cluster, it is permissible to allocate them separately"; col. 16, line 55 – col. 17, line 12; "write FAT1 and FAT2 in pages 5 to 16", it is also noted that as taught at col. 16, lines 36-54, the MBR, FAT and directory can be allocated in the same block or in the separate blocks), wherein pages in said one block each contain an area for recording management information (Chiba teaches memory with 1024 blocks, each block is further divided into 16 pages (e.g. 16384 pages total) and the page is divided into 512 bytes user data area and 16 bytes of management area, fig. 2). Here it is noted that Chiba expressly fail to mention about management area including 16 bytes and information indicating an unused area, an allocated area, a disabled area, however Estakhri teaches that flash memories including pages with such information (16 bytes) are well known in the art (Estakhri, figs. 1 and 2, where the extension field similar to Chiba includes 16 bytes, which is used for storing management information, such as flags indicating used or unused page, if the data is current or obsolete and the block is defective or not. Estakhri, col. 3, lines 25 - 62). Similarly, Yamazaki teaches memory divided into blocks, each block is further divided into pages and each page containing data area of 512 bytes and redundant portion of 16 bytes (similar to Chiba and Estakhri above), which includes various flags (Yamazaki, figs. 8 and 9) including system page and user page (e.g. flag indicating ordinary recording area/page and page allocated to the boot block) (Yamazaki, col. 12, line 40 - col. 14, line 4). Thus, it would have been obvious to one having ordinary skill in the art at the

time of the invention to utilize various flags as taught by Estakhri and Yamazaki in the system of Chiba to efficiently manage the memory using flags associated with the pages of the blocks.

Chiba, Estakhri and Yamazaki combined teach disabling remaining pages in said one block when said allocating step allocates the frequently changing information to said at least one page in said block, wherein said remaining pages include at least one page (Chiba teaches allocating certain block (e.g. fig. 4, cluster 1/ block 2 or figs. 16 and 17, where 2 cluster groups are allocated to the FAT/directory) to a FAT area and directory area, however they can also be separately stored in the respective blocks/clusters (see col. 16, lines 37-42). Chiba further teaches storing a flag "FFh" in the block/cluster, where the FAT information is stored, such that the remaining space (fig. 17) not used by the FAT information can not be used for ordinary data (e.g. remains empty) (col. 19, lines 48-61)). According to present application specification page 3, lines 3-8, the disabled pages provides distinction between FAT area and other area, such that ordinary user data is not stored in the remaining pages, thus it can be inferred that Chiba teaches disabling remaining pages (remaining space in the block) where the FAT/directory is allocated. It is further noted that Estakhri and Yamazaki teach setting various flags at page level, thus it would have been obvious to set flags indicating allocated area (e.g. pages where the frequently changing information is stored) and not allocated area (or empty) and an ordinary area (e.g. user area) as taught by Estakhri and Yamazaki at page level.

Chiba further teaches the frequently changing information is at least one of managing data recorded in the medium, FAT and root directory (Chiba, fig. 4, col. 16, lines 37-46, col. 19, lines 47-61).

With respect claim 3, Chiba, Estakhri and Yamazaki combined teach wherein at least one page is provided with an area for recording area management information including information indicating that the specific area has been allocated, information indicating an unused area and information indicating an ordinary area (Estakhri, fig. 2, col. 3, lines 25-62; Yamazaki, figs. 8 and 9, col. 12, line 40 - col. 14, line 4). With respect to the limitation information indicating the disablement of the page although unused, Chiba further teaches setting flag at the header of the cluster/block where the FAT is allocated so the user data can not be stored where the FAT/directory is stored (which is considered as disabling as per present application disclosure) (Chiba, col. 19, lines 38-61) and Estakhri and Yamazaki teach setting such flag at individual page level, therefore it would have been obvious to one having ordinary skill in the art at the time of the invention to set flag at page level as taught by Estakhri and Yamazaki in the system of Chiba for efficient memory management.

As per claim 6, Chiba teaches upon recording of information into the recording medium, allocating the block being unused to logical space and recording information into the block (Chiba, col. 14, line 44 – col. 15, line 24);

reading and modifying contents of the data management area in the recording medium; recording the modified data management area into another unused block in the recording medium (Chiba col. 15, lines 25-30, col. 13, line 60 – col. 14, lines 17);

and erasing the data management area before modified, and turning the block where the data management area before modified has resided into the block unused (Chiba, col. 14, lines 24-42, where it is readily apparent that the erase block turned into unused block).

As per claim 9, Chiba teaches all the limitations as explained with respect writing data in recording medium as explained with respect to rejection of claim 3 above, Chiba teaches erasing the information from recording medium (Chiba, col. 13, line 45 – col. 14, line 42) satisfying all the limitations of claim 9.

As per claim 11, Chiba, Estakhri and Yamazaki expressly fail to teach recording area (0 x 55) is recorded into area management information in the page corresponding to FAT area, however Chiba teaches recording “FFh” code to cluster (Chiba, col. 19, line 55) and Estakhri and Yamazaki teach setting flag/code per page of the block, thus combination of three teach setting flag and using specific number (e.g. 0 X 55) is considered as design choice and failed to provide any patentable subject matter over Chiba, Estakhri and Yamazaki, therefore it would have been obvious to one having ordinary skill in the art to use (0 X 55) as flag instead of “FFh” for frequently changing information.

As per claim 12, Estakhri teaches recording a logical address in a logical address part (Estakhri, fig. 2).

As per claim 13, Chiba and Yamazaki teach that allocating the specific area distinguishes the specific area having frequently changing information from ordinary

data area, so as to reduce amount of data modification of specific area (Chiba, col. 19, line 55, col. 2, lines 26-31; Yamazaki, col. 14, lines 1-4).

As per claim 14, Chiba, Estakhri and Yamazaki teach said allocating step records an area management information indicating an allocated area, for at least one page (Estakhri as explained with rejection of claims 1 and 3 above teaches a page containing 16 byte area with various flags (e.g. used/unused), where it is readily apparent that when the page is allocated, the flag is set to indicate that the page is allocated/used); and said disabling step records an area management information with information indicating a disabled area, for each remaining pages (Chiba teaches a flag for cluster and Estakhri and Yamazaki teach flag per page basis, where it is readily apparent that combination teach setting flags for each pages in the block as used/allocated, not used or disabled).

As per claim 15, Chiba, Estakhri and Yamazaki teach an unused area which indicates the area is available for writing data; an allocated area which indicates an area where a frequently changing information is recorded, a disabled area which indicates an area made to be in a disabled state in order to allocate only frequently changing information to other pages in said one block, or a disabled area which indicates an area in a disabled state due to damage (Chiba, col. 19, lines 35-61; Estakhri, fig. 2, col. 3, lines 25-62, Chiba teaches setting flag for cluster and Estakhri teaches setting flag per page), an ordinary recording area which indicates an area where ordinary data other than a frequently changing information is recorded (Yamazaki, col. 14, lines 1-4).

As per claim 16, Chiba teaches wherein said area management information is represented by a hexadecimal code (Chiba, col. 19, line 55).

As per claim 17, Chiba teaches wherein pages in said one block other than pages where the frequently changing information is allocated are neither used for data storage nor allocated to the logical space (Chiba, col. 19, lines 48-61).

As per claim 18, Estakhri and Yamazaki teach assigning a logical address to each page in said one block (Estakhri, fig. 2, Yamazaki, col. 14, lines 58-64).

Conclusion

8. The examiner also requests, in response to this Office action, support be shown for language added to any original claims on amendment and any new claims. That is, indicate support for newly added claim language by specifically pointing to page(s) and line no(s) in the specification and/or drawing figure(s). This will assist the examiner in prosecuting the application.

9. When responding to this office action, Applicant is advised to clearly point out the patentable novelty which he or she thinks the claims present, in view of the state of the art disclosed by the references cited or the objections made. He or she must also show how the amendments avoid such references or objections See 37 CFR 1.111(c).

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kaushikkumar Patel whose telephone number is (571)272-5536. The examiner can normally be reached on 7.30 am - 4.00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Hyung Sough can be reached on 571-272-6799. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Hyung S. Sough/
Supervisory Patent Examiner, Art Unit 2188
02/10/09

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